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## **Climate Governance in China: Using the “Iron Hand”**

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*“Premier Wen Jiabao on Wednesday vowed to realize the country’s green goal to cut energy intensity by 20 percent between 2006 and 2010. In a nationwide video and teleconference, Wen told governments at all levels to work with an ‘iron hand’ to eliminate inefficient enterprises.”<sup>1</sup>*

This chapter analyses the Chinese climate governance landscape that has emerged over the past decade, and focuses on the role of local governments. The central argument is that climate governance in China is predominantly top-down and highly bureaucratic in nature. Local initiatives to address climate change have tended to be responses to policy directions and performance targets imposed from the central government in Beijing. However, there is an interesting transnational dynamic to local climate governance in China as many local governments have embraced the financial opportunities afforded by the Kyoto Protocol’s Clean Development Mechanism (CDM). Alongside environmental aid projects funded by multilateral agencies and private foundations, there is considerable climate mitigation activity at the local level because of the CDM.

**Part I** of this chapter is a brief primer on China’s recent greenhouse gas (GHG) emissions patterns and the central government’s climate change policy. **Part II** examines the role played by local authorities in addressing climate change in China. They have acted on climate change mainly in response to policy directions issued by the central government. While there is considerable leeway for policy innovation at the local level, there are few, if any, incentives for local officials to address climate change; however, the central government has sought to correct this situation by invoking the cadre system (*gangwei zerenzhi*). As a result of framing climate change

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<sup>1</sup> Li Jing, “‘Iron Hand’ to help realize green goals” *China Daily* (Beijing, 6 May 2010) <[http://www.chinadaily.com.cn/china/2010-05/06/content\\_9814122.htm](http://www.chinadaily.com.cn/china/2010-05/06/content_9814122.htm)> accessed 11 October 2011.

as an issue of energy and economic restructuring above all else, climate mitigation has received more attention than adaptation even though many regions are highly vulnerable to flood risks, drought and other impacts related to global warming. **Part III** argues that local governments in China have responded positively to the incentives created by the CDM to host GHG reduction projects. This has had positive spill-over effects as CDM projects often offer co-benefits such as improving air quality (through fuel switching from coal to wind, for example). From a theoretical perspective, the interaction between Chinese local authorities and multilateral agencies and foreign investors/purchasers is an interesting example of how an international legal instrument can empower local governments to act on global environmental problems. **Part IV** concludes with some observations about the future of climate governance in China and the role of local governments.

### **Part I: Reducing the Carbon Footprint with a Focus on Energy Security**

This section provides some background on China's climate policy. The discussion is mostly on the central government's policy and thinking on the issue, which is important as local policy is heavily influenced by Beijing and, in fact, dictated by Beijing in many instances. The brief sketch of the key objectives of the current administration led by Hu Jintao and Wen Jiabao (2003-present) - economic development, poverty alleviation and reducing the widening income gap – informs the reader of the broader context in which climate change policy in China has developed.

#### ***Quick Snapshot***

China has reportedly surpassed the United States as the world's largest GHG emitter.<sup>2</sup> Annual carbon dioxide emissions from China grew by about four billion tonnes between 1992 and 2007.<sup>3</sup> More than 70% of this increase occurred between 2002 and 2007, but does not simply reflect higher gross domestic product (GDP) growth rates during this period. Possible explanations include increased exports following China's entry into the World Trade Organization in 2001, but a recent study indicates that the emissions growth between 2002 and 2007 is largely the result of capital investments to meet growing demand for roads, houses and other

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<sup>2</sup> Organisation for Economic Co-operation and Development (OECD)/International Energy Agency, 2007, *World Energy Outlook 2007: India and China Insights*; Organisation for Economic Co-operation and Development (OECD)/International Energy Agency, 2010, *World Energy Outlook 2010*.

<sup>3</sup> Jan Christoph Minx et al, "A 'Carbonizing' Dragon: China's fast growing CO<sub>2</sub> emissions revisited" (2011) *Environmental Science and Technology* 9144.

infrastructure.<sup>4</sup> Unlike developed countries, where emissions from household consumption usually make up the lion's share across energy demand categories, households in China were responsible for only 25% of total carbon dioxide emissions in 2007.<sup>5</sup> However, the direct and indirect emissions of urban households are far greater than those of rural households. Household emissions are likely to rise as Chinese society continues to rapidly urbanize. In short, China's high level of emissions is largely attributable to manufacturing goods for export, building infrastructure for its population of over one billion people, and to a lesser degree, changing demographic patterns of increasing urbanization and affluence.

However, while China's GHG emissions in absolute terms are high for an individual country, on a per capita basis its emissions remain relatively much lower. Carbon dioxide emissions per capita have increased in China from 2.2 tonne per capita in 1990 to 6.8 tonne per capita in 2010.<sup>6</sup> This is a modest figure compared to the per capita emissions in the European Union (EU-27) and the US of 8.1 tonne per capita and 16.9 tonne per capita in 2010 respectively.<sup>7</sup> There is, however, great concern that per capita emissions in China are quickly approaching levels found in Kyoto Protocol Annex I countries. It is predicted that if current trends in emissions by China and the industrialised countries continue for the next seven years, China will overtake the US by 2017 as highest per capita emitter.<sup>8</sup> Mr. Xie Zhenhua, vice chair of the National Development and Reform Commission (NDRC) which is in charge of climate policy in China, has publicly affirmed China's commitment to preventing its per capita emissions from reaching the levels seen in the US.<sup>9</sup>

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<sup>4</sup> Ibid, 9151.

<sup>5</sup> Ibid, 9151; also see Anna Korppoo & Alex Luta (eds), 'Towards a new climate regime?: Views of China, India, Japan, Russia and the United States on the road to Copenhagen', The Finnish Institute of International Affairs <[www.upi-fiia.fi](http://www.upi-fiia.fi)> accessed 10 September 2011, 34, wherein the authors point out that it is "[a] popular misconception ...that it is the rapid rise in private vehicles and household consumption that is spurring China's increase in energy consumption. This is the probable scenario in the future, but it is not the case at present".

<sup>6</sup> Olivier, J.G.J., Janssens-Maenhout, G., Peters, J.A.H.W. & J. Wilson (2011), 'Long-term trend in global CO2 emissions' The Hague: PBL Netherlands Environmental Assessment Agency/European Commission's Joint Research Centre, 2011 report <[http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj\\_id=13850&dt\\_code=NWS&lang=en](http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&obj_id=13850&dt_code=NWS&lang=en)> accessed on 21 November 2011; page 14.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid, 12.

<sup>9</sup> Richard Black, "China 'won't follow US' on carbon emissions" *BBC News* (25 October 2011)

Coal is the primary fuel used to generate electricity. In 2009, electricity generated from coal combustion accounted for 95.2% of total energy generation while electricity generated from oil and natural gas accounted for 0.6% and 0.2% respectively.<sup>10</sup> The use of coal to generate electricity is a major source of GHG emissions and conventional air pollution. Twenty out of thirty of the world's most polluted cities are in China.<sup>11</sup>

### ***Energy, Economy and Climate Change***

The Chinese leadership has come to recognize that it is no longer tenable to say that tackling climate change is a purely developed country issue now that China is the world's largest consumer of energy and carbon dioxide emitter. There is also keen awareness of China's vulnerability to the impacts of climate change.<sup>12</sup> Thus, in the past ten years, there have been marked changes in the Chinese government's stance towards climate change both in the international arena and domestically.<sup>13</sup> While

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<<http://www.bbc.co.uk/news/science-environment-15444858>> accessed 21 November 2011.

<sup>10</sup> Climate Policy Initiative at Tsinghua, *Review of Low Carbon Development in China: 2010 Report*, page 3.

<sup>11</sup> World Bank, 'China Quick Facts'

<<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/CHINAEXTN/0,,contentMDK:20680895~pagePK:1497618~piPK:217854~theSitePK:318950,00.html>>

accessed 3 November 2011 ; Shi Jiangtao, 'Beijing in top 10 – of dirtiest capitals' *South China Morning Post* (Hong Kong, 28 September 2011) A1.

<sup>12</sup> The *National Climate Change Programme* ("NCCP") contains a comprehensive documentation of the various projected impacts of climate change on the country. They include 'increased instability in agricultural production' and decreased yields in wheat, rice and maize; a nearly thirty percent reduction by 2050 in the size of the glaciers in western China that are an important source of drinking water, threats to biodiversity, including a conclusion that 'the giant panda [and other native creatures] are likely to be greatly affected'; substantial droughts in the already-arid northern provinces, a sea level rise along the coast; more frequent typhoons and storm surges; more frequent and intense heat waves; National Development and Reform Commission, 'China's National Climate Change Programme' (*National Development and Reform Commission People's Republic of China*), June 2007) <[www.ccchina.gov.cn/WebSite/CCChina/UpFile/File188.pdf](http://www.ccchina.gov.cn/WebSite/CCChina/UpFile/File188.pdf)> accessed 3 November 2011, pages 16-17.

<sup>13</sup> 'The Chinese leadership has changed its views on climate change completely in the last ten years'; Professor Lord Anthony Giddens, Opening Keynote Address, "Navigating the New Green Economy" conference, 23-24 May 2011, London.

adhering to its long-held views that the developed countries ought to lead international action (in accordance with the principle of common-but-differentiated responsibility), and that China is not economically ready to take on legally binding GHG emissions reduction targets at the international level, the Chinese leadership has also taken strides within the vast country to address climate change.<sup>14</sup>

These attitudinal changes must be understood within the wider context of the Chinese leadership's priority on economic development and related concerns of energy security. Economic progress is standard policy fare for all governments but in China, it is not merely a matter of policy. The Chinese Communist Party (CCP) has pegged its political future on 'performance legitimacy', that is, its rein on power is justified because it can provide faster growth and higher standards of living than any other form of government.<sup>15</sup> In accordance with this view, the government cannot afford to let the pace of economic development falter because of the unthinkable political repercussions.<sup>16</sup> The Chinese preoccupation with economic growth as the basis of state legitimacy is certainly not unique to China – many scholars have identified a similar impetus to the political legitimacy of Western governments<sup>17</sup> – but in China, the connection between material prosperity and political hegemony

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<sup>14</sup> See Lavanya Rajamani, *Differential Treatment in International Environmental Law* (Oxford University Press 2006); Ellen Hey, 'Common but Differentiated Responsibilities' in Rüdiger Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (Oxford University Press 2009). For articulation of China's adherence to the common-but-differentiated responsibility principle, see Section 3.2 of the NCCP. At the UNFCCC Conference of the Parties held in Copenhagen in December 2009, China maintained its traditional position against legally binding emission reduction targets; see Permanent Mission of the People's Republic of China to the United Nations Office at Geneva and other International Organizations in Switzerland, *Implementation of the Bali Roadmap- China's Position on the Copenhagen Climate Change Conference* (20 May 2009) <[www.china-un.ch/eng/bjzl/t564324.htm](http://www.china-un.ch/eng/bjzl/t564324.htm)> accessed 18 September 2011.

<sup>15</sup> See Kenneth Lieberthal, *Governing China: From Revolution Through Reform* (W.W. Norton & Company 1995).

<sup>16</sup> André Laliberté and Marc Lanteigne, 'The issue of challenges to the legitimacy of CCP rule' in André Laliberté and Marc Lanteigne (eds), *The Chinese Party-State in the 21st Century: Adaptation and the Reinvention of Legitimacy* (Routledge 2008) provides a succinct overview of this viewpoint as well as the argument that while economic growth is the government's key policy priority, growth does not automatically translate into increased legitimacy. The government is actively seeking means to cultivate other sources of legitimacy such as nationalism.

<sup>17</sup> See eg, Jürgen Habermas, *The Legitimation Crisis* (Beacon Press 1975), Claus Offe, *Contradictions of the Welfare State* (MIT Press 1984).

appears to be much closer.

Although the current Hu-Wen administration has sought to portray itself as more sympathetic to the plight of the poor and sensitive to social needs such as healthcare and environmental protection, the growth-oriented policies of Hu's predecessor, Jiang Zemin, remain central to the CCP's governing strategy albeit pursued with greater moderation.<sup>18</sup> Hu's concept of 'the Scientific Outlook on Development', which took centre stage at the National People's Congress meeting in March 2004, calls on the party to view economic development as the foremost priority which is to be pursued as part of a more balanced, sustainable and 'people-centric' course of development.<sup>19</sup> Accordingly, reducing energy consumption and environmental pollution are also important policy objectives. Commentators argue, however, that local government officials are likely to be able to circumvent tougher calls from Beijing to address environmental issues by claiming that economic development takes priority in accordance with Hu's concept.<sup>20</sup> Further, as will be discussed below, the post-1978 growth-centric policies have also engendered 'Two Chinas', one wealthy and one still struggling with poverty, which has significant bearing on how much power and resources local governments in some regions have to address climate change.<sup>21</sup>

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<sup>18</sup> June Teufel Dreyer, *China's Political System: Modernization and Tradition* (5th edn, Pearson Education Inc 2006) 134-135; Tony Saich, *Governance and Politics of China* (3rd edn, Palgrave Macmillan 2011); Jonathan Schwartz, 'Shifting Power Relations: State-NGO relations in China' in André Laliberté and Marc Lanteigne (eds), *The Chinese Party-State in the 21st Century: Adaptation and the Reinvention of Legitimacy* (Routledge 2008) examines the environmental costs of rapid economic growth in China and the implications of the government's turn towards civil society (environmental non-governmental organizations) to help control environmental degradation.

<sup>19</sup> The plenum decision of the Third Plenary Session of the 16<sup>th</sup> Central Committee endorsed the idea behind the scientific development concept which was stated to be "tak[ing] people as the main thing [yiren weiben], establish a concept of comprehensive, coordinated, sustainable development, and promote comprehensive economic, social and human development". This statement has been used by the Chinese media to represent the essence of Hu's scientific development concept; Joseph Fewsmith, 'Promoting the Scientific Development Concept' (2004) No. 11 China Leadership Monitor, Hoover Institution (Stanford University)

<<http://www.hoover.org/publications/china-leadership-monitor/article/6226>> accessed 25 November 2011. For an official summary of the Scientific Development concept, see Renming Wang, 'Ke xue fa zhan guan: xian dai hua jian shi de zhong yao zhi da shi xiang', (*People's Net*, 9 January 2006) <<http://theory.people.com.cn/GB/49150/49152/4008564.html>> accessed 25 November 2011.

<sup>20</sup> Tony Saich, *Governance and Politics of China* (3<sup>rd</sup> edn, Palgrave Macmillan 2011) 103.

<sup>21</sup> See discussion in Part II below. The term 'Two Chinas' is borrowed from Daniel Abebe & Jonathan



Tackling soaring energy consumption and improving energy efficiency are in tandem with the Chinese leadership's economic priorities because there is a strong business case for more economical use of such valuable resources. Since 2003, Chinese authorities have framed climate change as predominantly an energy issue.<sup>22</sup> First, energy security has always been a key concern for the Chinese leadership; these concerns intensified in 2003 when China became the world's second largest consumer of oil and the volatile oil prices in the 2000s increased the sense of vulnerability that Chinese dependence on imported oil engendered.<sup>23</sup> A country with abundant coal reserves (the third largest known reserves in the world), China became a net importer of coal in 2009 from countries such as Indonesia and Australia when inefficiencies in the domestic coal market rendered imported coal prices competitive with domestic coal prices.<sup>24</sup> Beijing's concerns about relying on imported energy intensified as international criticism of China's energy thirst grew.<sup>25</sup> Secondly, reducing energy consumption and energy intensity (measured as energy consumption per unit of GDP) are viewed by the Chinese government as key aspects of a sustainable long-term energy policy that addresses both energy security and the inevitable rise in

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S. Masur, 'International Agreements, Internal Heterogeneity, and Climate Change: The "Two Chinas" Problem' (2010) 50(2) *Virginia Journal of International Law* 325-389 in which the authors argue that the economic disparities between the East and the West of China and the consequent policy imperative for the Chinese government to narrow the East-West gap for reasons of political stability and national security profoundly affects China's incentive structure and willingness to join an international climate change agreement that features mandatory emissions reduction targets. See Barry J. Naughton, 'The Western Development Program' in Barry J. Naughton & Dali L. Yang (eds), *Holding China Together* (Cambridge University Press 2004) for the government programme to address, inter alia, poverty, low literacy rates and environmental problems in the Western part of China to strengthen national unity and reduce regional inequalities within the country.

<sup>22</sup> Dongsheng Zang, 'From Environment to Energy: China's Reconceptualization of Climate Change' (2009-2010) 27 *Wisconsin International Law Journal* 543, 562.

<sup>23</sup> Ibid, 564.

<sup>24</sup> Richard Balme, 'China's Climate Change Policy: Governing at the Core of Globalization' (2011) 5(1) *Carbon and Climate Law Review* 46.

<sup>25</sup> See, for example, International Crisis Group, *China's Thirst for Oil* (Asia Report No. 153, 9 June 2008), <[http://www.crisisgroup.org/~media/Files/asia/north-east-asia/153\\_china\\_s\\_thirst\\_for\\_oil.pdf](http://www.crisisgroup.org/~media/Files/asia/north-east-asia/153_china_s_thirst_for_oil.pdf)> accessed 25 November 2011; Sarah Arnott, 'Fears of Chinese Land Grab as Beijing's Billions Buy Up Resources', *The Independent* (UK, 2 October 2010). <<http://www.independent.co.uk/news/world/asia/fears-of-chinese-land-grab-as-beijings-billions-buy-up-resources-2095451.html>> accessed 24 November 2011.



international pressure on China to curb GHG emissions.<sup>26</sup> These ideas found their way into the National Climate Change Programme (NCCP), which lays out China's blueprint for tackling climate change.

### *The National Climate Change Programme*

The NCCP is a comprehensive document that sets out the principles to guide China's domestic and international climate policy, mitigation and adaptation measures, and an institutional framework to implement the policies outlined in the Programme.<sup>27</sup> China's policies on climate change, both domestic and international, are officially guided by six principles: (1) to address climate change within the broader framework of the country's national sustainable development strategy; (2) to follow the principle of common-but-differentiated responsibility; (3) to address both climate change mitigation and adaptation; (4) to integrate climate change-related policies with programs for national and social economic development; (5) to rely on technological advancement for effectively mitigating and adapting to climate change; and (6) to actively and extensively participate in international cooperation on climate change.<sup>28</sup> Harris argues that these principles clearly indicate that climate change is taken seriously, but also that it does not take priority over China's other national economic objectives.<sup>29</sup> Therefore:

[i]f climate change mitigation and adaptation can be made consistent with those objectives, China will act forthrightly. If advantages for development and other objectives can be rung from the climate change issue, China will exploit them, e.g., in extracting funding and technology for both economic development and GHG mitigation.<sup>30</sup>

The mitigation measures proposed in the NCCP focus on energy conservation and 'energy structure optimization', while adaptation will be carried out through projects aimed at ecosystem protection, disaster prevention, and reduction and infrastructure development.<sup>31</sup> The NCCP elaborates that 'optimizing the energy consumption structure' will include measures such as rapid development of renewable

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<sup>26</sup> Supra note 22, 567.

<sup>27</sup> See NCCP, 29 for institutional framework.

<sup>28</sup> Section 3.2 of the NCCP.

<sup>29</sup> Paul G. Harris, "China and Climate Change: From Copenhagen to Cancun" (2010) 40 Environmental Law Report 10858, 10859.

<sup>30</sup> Ibid.

<sup>31</sup> NCCP, 24.

energy (the target is to raise the proportion of renewable energy in China's primary energy supply up to 10% by 2010), nuclear power and increasing extraction of coal bed methane (up to ten billion cubic meters).<sup>32</sup> It also includes a program to improve energy efficiency in China's largest 1000 enterprises, retiring inefficient power and industrial plants, energy efficiency standards for buildings, and vehicle fuel consumption standards.<sup>33</sup> Finally, by placing climate change policy within the jurisdiction of the NDRC, one of the most powerful Chinese governmental bodies with a key focus on economic policy and energy policy (through its National Energy Administration), the government has sent a clear signal that climate change is, above all, an economic/energy issue rather than one concerning the environment per se.<sup>34</sup> In short, the NCCP 'provides for the implementation of a wide range of energy and industrial policies that, while focused on energy security, contribute to emissions reductions'.<sup>35</sup>

### *Energy and Climate Change in the Five Year Plans*

A legacy of its communist ideological roots, the CCP has continued to roll out five-year plans to coordinate national policy goals, and in recent years climate change and energy policy issues have begun to be incorporated into these plans. An energy intensity target (reduction by 20% in five years) was set in the Eleventh Five-Year Plan (2006-2010).<sup>36</sup> Greater attention has been paid to climate change in the Twelfth

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<sup>32</sup> Ibid, 26.

<sup>33</sup> See ZhongXiang Zhang, 'China in the transition to a low-carbon economy' (2010) 38 Energy Policy 6638. 6639-6641 for discussion of these measures. Studies have shown that the shut-down of obsolete and inefficient plants and the energy efficiency program for China's Top 1000 enterprises were responsible for the success in reducing energy intensity and meeting the target set in the 11<sup>th</sup> Five-Year plan; Deborah Seligsohn, 'The Transformation of China's Energy System: Challenges and Opportunities', Before the Subcommittee on Energy and Power, Committee on Energy and Commerce, U.S. House of Representatives, 4 April 2011, page 6.

<sup>34</sup> Tseming Yang, 'The Implementation Challenge of Mitigating China's Greenhouse Gas Emissions', (2008) 20 Georgetown International Environmental Law Review, 688.

<sup>35</sup> Department of Energy and Climate Change, 'Stars and Dragons: The EU and China- European Committee' (UK, 7 May 2009)

<<http://www.publications.parliament.uk/pa/ld200910/ldselect/lddeucom/76/76we06.htm>> accessed 1 October 2011.

<sup>36</sup> Chinese Government's Official Web Portal, 'Facts and figures: China's main targets for 2006-2010' (6 March 2006) <[http://www.gov.cn/english/2006-03/06/content\\_219504.htm](http://www.gov.cn/english/2006-03/06/content_219504.htm)> accessed 1 October 2011. The term "Guidelines" (规划) has been used in place of "Plan" (计划) for the above-mentioned

Five-Year Plan (2011-2015). Targets that are congruent with the three commitments that China made at the United Nations Framework Convention on Climate Change (UNFCCC) Copenhagen and Cancun conferences in 2009 and 2010 respectively can be found in the Twelfth Five-Year Plan: (1) The five-year carbon intensity reduction goal is 17%; (2) the 2015 non-fossil fuel goal is set to reach 11.4% of China's total energy mix; and (3) the 2015 forest goals are to increase forest cover by 12.5 million hectares and forest stock volume by 600 million cubic meters.<sup>37</sup>

Despite its rapid shift to a market-based economy in recent years, administrative plans remain an integral part of China's system of governance, and this extends to environmental governance. Plans may be local or national in scope, and focused on a specific policy area or be comprehensive in scope. Plans are as important as laws or may even be considered more important, practically speaking, because statutes and other legal instruments tend to be rather general without details about specific goals and methods of implementation.<sup>38</sup> Plans with target requirements, however, are adhered to by government agencies and officials by integration of such requirements into the cadre system (which is discussed below). It is a matter of debate if plans are the result of bargaining amongst agencies at the central and local levels of

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Five-Year programs to reflect the transition from a Soviet-style planned economy to a more market-oriented model but the latter term remains in popular usage and therefore has been adopted in this chapter; see Chinese Government's Official Web Portal, 'The new 11<sup>th</sup> Five-Year Guidelines', (9 November 2005) <[http://www.gov.cn/english/2005-11/09/content\\_247198.htm](http://www.gov.cn/english/2005-11/09/content_247198.htm)> accessed 1 October 2011.

<sup>37</sup> Deng Shasha, 'Key targets of China's 12<sup>th</sup> five-year plan', *Xinhua News Agency* (Beijing 5 March 2011) <[http://news.xinhuanet.com/english2010/china/2011-03/05/c\\_13762230.htm](http://news.xinhuanet.com/english2010/china/2011-03/05/c_13762230.htm)> accessed 3 November 2011; also see Deborah Seligsohn and Angel Hsu, 'How Does China's 12<sup>th</sup> Five-Year Plan Address Energy and the Environment?' (*The Network for Climate and Energy Information*, 7 March 2011). <<http://www.chinafaqs.org/blog-posts/how-does-chinas-12th-five-year-plan-address-energy-and-environment/>> accessed 1 October 2011.

<sup>38</sup> William P. Alford & Yuanyuan Shen, 'The Limits of the Law in Addressing China's Environmental Dilemma', in Michael B. McElroy et al. (eds), *Energizing China: Reconciling Environmental Protection and Economic Growth* (Harvard University Press 1998); Mol and Carter argue that the failure to adhere to the law carries less serious consequences than failure to carry out administrative programs and plans. Many environmental clean-up programs are also, for example, not based on legal obligations but are carried out because of administrative decisions taken by superiors; Arthur P.J. Mol & Neil T. Carter, 'China's Environmental Governance in Transition' (2006) 15(2) *Environmental Politics* 149, 157.

government or are ultimately directives from Beijing to lower-level entities, as empirical studies suggest that both phenomena are at play.<sup>39</sup> Interestingly, the recently amended Energy Conservation Law explicitly refers to the use of the cadre system, linking plans and laws in a way that is not found in earlier legislation.<sup>40</sup> Article 6 of the Energy Conservation Law states that the State will implement a system of accountability for energy conservation targets and a system for performance evaluation whereby the fulfilment of energy conservation targets will be part of the evaluation of local governments and “other responsible persons” (which arguably include, *inter alia*, village leaders, private enterprises, and government-linked companies).<sup>41</sup> The next section examines the role of local authorities in achieving these targets.

## **Part II: The Role of Local Government**

It is difficult to generalise when provinces across China face different challenges posed by climate change, have very different levels of financial resources and degrees of political will to address environmental issues. However, a common chord is that the top-down deployment of the cadre responsibility system has been instrumental in galvanising local government action on climate change which historically has not been a priority. The new emphasis placed by the central government on achieving the short-term energy intensity target in the Eleventh Five-Year Plan also led to the central government focusing on the closure of energy-inefficient and obsolete industrial facilities and power plants.<sup>42</sup> Again, local governments were given targets

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<sup>39</sup> See Michael T. Rock, ‘Integrating Environmental and Economic Policy Making in China and Taiwan’ (2002) 45 *American Behavioral Scientist* 1435-1455; Dan Guttman and Song Yaqin, ‘Making central-local relations work: Comparing America and China environmental governance systems’ (2007) 1(4) *Frontiers of Environmental Science and Engineering in China* 418-433.

<sup>40</sup> The amended Energy Conservation Law took effect on 1 April 2008. The 2008 Law on the Prevention and Control of Water Pollution also uses the cadre system to create incentives for local officials to enforce national water quality standards. It has been argued that the use of the cadre system to address water pollution signals a move towards a political rather than legal solution and will further centralize the power of the Chinese Communist Party, limit transparency and public participation in environmental governance; Wyatt F. Golding, ‘Incentives for Change: China’s Cadre System Applied to Water Quality’ (2011) 20 *Pacific Rim Law and Policy Journal* 399-428.

<sup>41</sup> 中华人民共和国节约能源法 (Law of the People’s Republic of China on Energy Conservation). The original wording of Article 6 is as follows: 第六条 国家实行节能目标责任制和节能考核评价制度，将节能目标完成情况作为对地方人民政府及其负责人考核评价的内容。

<sup>42</sup> Dongsheng Zang, ‘Green from Above: Climate Change, New Developmental Strategy, and

to close down a specific number of facilities in their jurisdictions. Therefore, by framing climate change as an energy issue and using the cadre system, the central government has placed climate change on the agenda of local governments. In addition to these mandated targets for action, authorities have provided financial incentives for local action towards reducing energy consumption, improving energy efficiency and closing down obsolete industrial facilities.

In China, there are four levels of government below the central government: provincial, prefectural, county, and township.<sup>43</sup> Provincial level governments are first-level state administrative organs of the 23 provinces, five autonomous regions, four provincial-level municipalities, and two special administrative regions (SARs).<sup>44</sup> The official view is that “[p]rovincial governments implement local laws, regulations and decisions of the provincial people’s congresses and their standing committees, are responsible to and report on their work to provincial people’s congresses and their standing committees. Provincial people’s congresses and their standing committees have the power to supervise the work of provincial governments, change and annul inappropriate decisions of the provincial governments. Provincial governments have the power to exercise unified leadership over the work of governments at the levels of the cities, counties, townships and towns under their jurisdiction and to exercise unified administration over economic, social and cultural affairs”.<sup>45</sup> Furthermore, Article 3 of the Constitution states “[a]ll administrative, judicial and procuratorial organs of the state are created by the people’s congresses to which they are responsible and by which they are supervised”. However, this arrangement is not akin to the “checks and balances” and “separation of power” model of government found in democracies. In a socialist regime, the role of people’s congresses or legislatures is not to check executive power but to implement executive proposals “with minimal change or opposition”.<sup>46</sup> While electoral reforms introduced in the late 1970s and still underway have decentralised the legislative system and introduced a degree of openness in the electoral system, it can be argued that the electoral reforms have only entrenched, and not weaken, Party rule.<sup>47</sup>

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Regulatory Choice in China’ (2009-2010) 45 Texas International Law Journal 201-232.

<sup>43</sup> Article 30 of the Constitution sets out the administrative institutional framework.

<sup>44</sup> China Internet Information Center, ‘China’s Political System’, (Central People’s Government website) <<http://www.china.org.cn/english/Political/28842.htm>> accessed 29 November 2011.

<sup>45</sup> Ibid.

<sup>46</sup> Kevin J. O’Brien, *Reform without liberalization: China’s National People’s Congress and the politics of institutional change* (Cambridge University Press 1990), 74.

<sup>47</sup> Ying Sun, ‘Constraining or Entrenching the Party-state? The Role of Local People’s Congresses in

This chapter will focus on the provincial and prefectural levels of local government, but will exclude consideration of the SARs, Hong Kong and Macau, because the social, political and economic conditions in these localities are vastly different from those of mainland China due to the legacy of colonialism.<sup>48</sup>

### *The Cadre System*

The cadre system is the instrument used by the central government to steer local leaders and by which it holds them accountable.<sup>49</sup> As a method of governance, it is the primary means of controlling and monitoring the actions of roughly 60 million state employees and is therefore a key source of political control of the CCP. The cadre administration, most commonly found in communist systems, is a distinct form of administration marked by its emphasis on goals and its flexible nature. It has been argued that the cadre system is highly sensitive to the changing preferences of political leaders who can use this mighty administrative system to work for new policy goals.<sup>50</sup>

Under the cadre system, the performance of local officials and heads of state-owned enterprises (SOEs) is reviewed against targets laid down by higher levels and the evaluation has significant bearing on promotion and future job prospects. Failure to perform up to par can lead to dismissal or demotion in certain cases.<sup>51</sup> While local governments have significant leeway in deciding how they will meet centrally imposed targets, such flexibility being necessary to formulate policies that are suited to local conditions, and there is also more than a grain of truth in the ancient

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the PRC' (2010) 40(3) Hong Kong Law Journal 833.

<sup>48</sup> For discussion on Hong Kong's climate change policy, see Zhao Yuhong, "Responding to the Global Challenge of Climate Change – Hong Kong and 'One Country Two Systems'" (2011) Vol. 5(1) Carbon and Climate Law Review 70-81; Shu Yi Chu & Heile Schroeder, 'Private Governance of Climate Change in Hong Kong: An Analysis of Drivers and Barriers to Corporate Action', (2011) Asian Studies Review 34(3) 287-308.

<sup>49</sup> Maria Heimer, 'The cadre responsibility system and the changing needs of the party' in Kjeld Erik Brodsgaard and Zheng Yongnian (eds), *The Chinese Communist Party in Reform* (Routledge 2006).

<sup>50</sup> Bo Rothstein, *Just Institutions Matter: The Moral and Political Logic of the Universal Welfare State* (Cambridge University Press 1998), 91.

<sup>51</sup> See Susan H. Whiting, "The Cadre Evaluation System at the Grass Roots: The Paradox of Party Rule" in Barry J. Naughton & Dali L. Yang (eds), *Holding China Together* (Cambridge University Press 2004).

Chinese proverb “Heaven and the Emperor are far away”, the cadre system has been instrumental in increasing state capacity to monitor and control lower-level officials.<sup>52</sup> Traditionally, performance criteria consisted mainly of economic growth targets.<sup>53</sup> The recent inclusion of environmental and energy targets in the target responsibility system has been instrumental in motivating local government officials to act on climate change.<sup>54</sup> Otherwise, the incentives are stacked against local action on climate change as there are no rewards for climate action and the prevailing perception is that reducing GHG emissions and energy consumption will thwart economic growth.

In the case of climate change, the national energy intensity target set out in the Five-Year Plan was disaggregated into provincial targets, taking into account targets proposed by the provinces in their own provincial Five-Year Plans, and submitted by the NDRC to the State Council for approval.<sup>55</sup> Once the State Council approved the NDRC’s plan, provincial governments were required to re-allocate the targets to the city and county level, as well as to industrial sectors and major enterprises.<sup>56</sup> Targets are commonly inflated for lower levels of government in Chinese policy campaigns. This practice of hedging stems from the upper-level government anticipating some degree of failure of local efforts. For example, in Shanxi, the targets assigned by the provincial government were raised for municipalities, counties, and enterprises to

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<sup>52</sup> The proverb encapsulates the idea that local officials far from the capital enjoy unchecked freedom, which often leads to rampant corruption and victimization of the local populace. See Maria Edin, ‘State Capacity and Local Agent Control in China: CCP Cadre Management from a Township Perspective’ (2003) 173 *The China Quarterly* 35-52, who argues that the capacity of the central state has increased rather than declined in the post 1989-reform era because reforms to the cadre system have improved monitoring and strengthened political control of lower-level officials.

<sup>53</sup> Xin Qiu & Honglin Li, ‘Super Ministry Reform: Background, Challenges, and the Future’ (2009) 39 *Environmental Law Institute* 10152, 10160 <[www.epa.gov/ogc/china/xin.pdf](http://www.epa.gov/ogc/china/xin.pdf)> accessed 1 October 2011.

<sup>54</sup> Alex Wang, ‘Meeting China’s Climate Targets’, (*Switchboard*, 10 December 2009) <[http://switchboard.nrdc.org/blogs/awang/meeting\\_chinas\\_climate\\_targets.html](http://switchboard.nrdc.org/blogs/awang/meeting_chinas_climate_targets.html)> accessed 29 September 2011.

<sup>55</sup> Fei Teng & Alun Gu, ‘Climate Change: National and Local Policy Opportunities in China’ (2007) *Fondazione Eni Enrico Mattei Working Papers*, Paper 135, page 7.

<sup>56</sup> Ibid; also see Jimin Zhao, ‘Climate Change Mitigation in Beijing, China’, case study prepared for ‘Cities and Climate Change: Global Report on Human Settlements 2011’, <<http://www.unhabitat.org/grhs/2011>> accessed 10 September 2011, page 5.



ensure achievement of the overall provincial target.<sup>57</sup> In one municipality, targets at the county level ranged from a 27 percent to 30 percent reduction in energy intensity.<sup>58</sup>

Institutionally, shortly after the establishment of the National Leading Group on Climate Change (NLGCC), Provincial Leading Groups on Climate Change were formed. Between June 2007 and March 2008, eight provinces and autonomous regions created leading groups.<sup>59</sup> Hainan Province, for example, formed a provincial leading group within days of the NLGCC and developed the Hainan Provincial Work Plan on Energy Saving and Pollution Reduction. This Work Plan was disseminated to all agencies and lower level governments. Its accompanying cover letter stated that the mission of the leading group was to ensure implementation of the national climate policy, and design and carry out provincial-level action plans on climate change, energy saving, and pollution reduction. Finally, prefectural and county governments were required to establish their own leading groups with similar functions. Provincial climate change plans were also drawn up.<sup>60</sup>

### ***Factors Influencing Local Government Action***

The promulgation of action plans and establishment of working groups are formalities that do not inform us about the institutional capacity and factors of political economy that influence the willingness and ability of provincial and

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<sup>57</sup> Genia Kostka and William Hobbs, 'Local Energy Efficiency Policy Implementation in China: Bridging the Gap between National Priorities and Local Interests' (forthcoming, China Quarterly). The pre-publication version, relied upon in this article, can be found here:

<[http://www.frankfurt-school.de/content/en/news/newsfolder/2011/01/17012011\\_n](http://www.frankfurt-school.de/content/en/news/newsfolder/2011/01/17012011_n)> accessed 10 October 2011, 11.

<sup>58</sup> Ibid.

<sup>59</sup> They were created in Fujian, Gansu, Hainan, Hubei, Ningxia, Qinghai, Sichuan, and Zhejiang. Ye Qi, Li Ma, Huanbo Zhang, Huimin Li, 'Translating a Global Issue into Local Priority: China's Local Government Response to Climate Change', (2008) 17(4) The Journal of Environment and Development 379, 382. The rest of the information contained in this paragraph relies on this same source.

<sup>60</sup> The United Nations Development Programme (UNDP) and the European Union have supported the NDRC in developing a demonstration project to assist provinces in drawing up and implementing climate change mitigation and adaptation programmes; see 'Project Document: Provincial Programmes for Climate Change Mitigation & Adaptation in China'

<<http://www.undp.org.cn/projectdocs/56901.pdf>> accessed 7 October 2011.

prefectural governments to meet the energy intensity targets and, more broadly, engage in addressing climate change. To meet the energy intensity targets, the realistic option for many local governments, especially those of provinces and towns that are highly dependant on pollution and energy-intensive economic activity such as coal mining, is to shut down older and small-scale plants. However, such a course of action has significant ramifications for local tax revenues, GDP growth, employment and social stability. These factors weigh far more heavily on local government officials than climate change, which is perceived as a large-scale global problem that is the proper concern of national authorities and beyond the abilities of local government. This section examines these factors before turning to consider, on a more optimistic note, the creative strategies that local government officials have used to align national objectives with local priorities.

*Perception of climate change as a “global issue” and not the “business” of local governments*

The central government’s strategy of addressing climate change has conflated the issues of energy saving, pollution reduction and climate change, but local governments tend to attach very different degrees of importance to each of these issues.<sup>61</sup> Local governments are concerned about energy saving, first and foremost, because intensive energy use increases costs of production and economic growth. Pollution usually ranks second. While public protests have occasionally forced local authorities to curb flagrant violations of environmental laws and clean up major environmental disasters, tackling pollution is generally a low priority for them because it implies investment in costly technology and slowing down local economic growth when factories are forced to close.<sup>62</sup> Even if there is the local will to act, environmental protection bureaus (EPBs) at the local level are commonly under-resourced and relatively powerless vis-à-vis their economic counterparts, as discussed in the abundant literature on the “implementation gap” in Chinese environmental law.<sup>63</sup>

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<sup>61</sup> Supra note 59, 393.

<sup>62</sup> Austin Ramzy, ‘China Environmental Protests Gather Force’ *Time Magazine* (Beijing, 23 November 2009) <<http://www.time.com/time/world/article/0,8599,1942130,00.html>> accessed 24 November 2011; ‘Poison Protests’, *The Economist*, (Beijing, 20 August 2011) <<http://www.economist.com/node/21526417>> accessed 24 November 2011.

<sup>63</sup> See, for example, Kenneth Lieberthal, ‘China’s Governing System and Its Impact on Environmental Policy’ (1997) 1 *China Environment Series* 3-8; Kenneth Lieberthal, *Governing China: From Revolution Through Reform* (W.W. Norton 1995); Xue Lan, Udo E. Simonis, Daniel J. Dudek et al,

Finally, climate change as a policy concern is a distant last, being perceived as an issue of little practical relevance for local governments. Climate change is seen as an international issue driven by external pressure and therefore the purview of the central government.<sup>64</sup> In addition, local governments do not face pressure from their constituencies to address climate change. There is a dismally low level of awareness about climate change amongst the general population, while employment and issues of survival are foremost concerns for the ordinary folk. A case study on Beijing, which is one of the most modern Chinese cities with a high concentration of human capital and tertiary institutions, reported that simple online and street surveys showed the public knew very little about climate change and often confused climate change with air pollution.<sup>65</sup> Ye and others argue that the recent realization by local governments of the link between energy saving and climate change, together with the dictates of the central government, has helped to 'translate the global issue of climate change into a local priority'.<sup>66</sup> However, this 'priority' has only been in relation to climate mitigation (from energy efficiency measures) rather than climate adaptation.

### Taxation System

A new tax-sharing system between the central government and local governments was introduced in China in 1994. This fiscal system has been criticised for creating incentives for local governments to focus on economic growth at the

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'Environmental Governance in China', Report of the Task Force on Environmental Governance to the China Council for International Cooperation on Environment and Development (CCICED) (Beijing, November 2006); Elizabeth C. Economy, *The River Runs Black:*

*The Environmental Challenge to China's Future* (Cornell University Press 2004); Benjamin van Rooij, *Regulating Land and Pollution in China: Lawmaking, Compliance, and Enforcement; Theory and Cases* (Leiden University Press 2006).

<sup>64</sup> Supra note 59, 393.

<sup>65</sup> Zhao, supra note 41, 12. In the first comprehensive survey of global opinions about climate change conducted by Gallup in 2007 and 2008, 62% of those surveyed in China showed that they were aware of climate change (roughly at the world's average). However, the survey also showed that the general Chinese perception of climate change as a relatively low threat is pervasive across demographic and geographic groups; Anita Pugliese and Julie Ray, 'Top-Emitting Countries Differ on Climate Change Threat', Gallup, 7 December 2009

<<http://www.gallup.com/poll/124595/top-emitting-countries-differ-climate-change-threat.aspx>>  
accessed 24 November 2011.

<sup>66</sup> Supra note 59, 394.

expense of environmental protection.<sup>67</sup> Taxes are grouped into three categories: revenue for the central government, revenue for local governments, and revenues shared by both tiers of government. Taxes that are easily raised from relatively steady sources, such as the vehicle purchase tax and consumption tax, are assigned to the central government.<sup>68</sup> Income tax and value-added tax (VAT) are shared – the local government receives 25% of VAT and 40% of income tax.<sup>69</sup> The revenues collected from the business, agricultural and resources taxes (except taxes paid by maritime companies and petroleum companies that are collected centrally), and the real estate and construction taxes, belong to the local governments.<sup>70</sup>

The introduction of the tax-sharing system increased the central government's revenue by 200% in 1994 relative to the previous year, and its proportion of total tax revenues grew from 22% in 1993 to 55.7% in 1994.<sup>71</sup> Meanwhile, its share of total government expenditure only rose by 2%. By 2008, local governments received 47% of total tax revenues but were responsible for 78.7% of total government expenditure.<sup>72</sup> Local governments therefore have an incentive to focus on local economic development to enlarge their taxation base in order to finance education, healthcare, public transportation, and so on. As discussed below, local governments have had to craft creative solutions based on bargaining and informal incentives to meet their energy targets without overly hindering local development.

### Capacity

Chinese local government officials operate in a cultural/social context that emphasises hierarchy, order, knowing (and adhering) to one's place in the scheme of things.<sup>73</sup> This tradition perhaps originated from the influence of Confucian philosophy on Chinese society, which emphasise the importance of conformity to one's role in a hierarchy ('[T]he emperor should act like an emperor; an officer should

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<sup>67</sup> Zhang, *supra* note 25, 6648; Fei Teng & Alun Gu, *supra* note 40, 8.

<sup>68</sup> Ze Zhu and Barbara Krug, 'Central Unification versus Local Diversity: China's Tax Regime, 1980s-2000s', Erasmus Research Institute of Management (ERIM) Report Series Research in Management (Ref. No: ERS-2004-089-ORG, August 2004) <[www.irim.eur.nl](http://www.irim.eur.nl)> accessed 3 October 2011, 27-28.

<sup>69</sup> *Ibid.*

<sup>70</sup> *Ibid.*

<sup>71</sup> Zhang, *supra* note 25, 6648.

<sup>72</sup> *Ibid.*

<sup>73</sup> Fu Zhongyuan, *Autocratic Tradition and Chinese Politics* (Cambridge University Press 1993).

act like an officer; a father should act like a father; and a son should act like a son') and this phenomenon of blind obedience to the superior has been labelled 'political level decides all' (*fan zheng zhi hua*).<sup>74</sup> The cadre system reinforces this cultural/social predilection for conformity and respect for hierarchy.

In such a hierarchical system, the capacity of local governments to act is constrained by the level of local autonomy. Traditionally, climate change has been viewed as a central government concern, in which local governments must implement the policies and regulations set by their superiors. Local government officials have hesitated to become involved when they receive signals that their involvement is not welcome. As for policy innovation to address climate change, the political sensitivity of this issue makes local governments feel that it is politically astute to align with national policy rather than to act unilaterally.<sup>75</sup>

Financial capacity is another pressing issue. Compared to the rest of the country, the Western provinces such as Qinghai, Gansu and Xinjiang face more climate change challenges such as the prospect of melting glaciers and severe changes in weather patterns. However, they are also far poorer than the Eastern provinces and have comparatively less capacity for adaptation.<sup>76</sup> In addition, the lack of awareness of the

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<sup>74</sup> Xin Qiu and Honglin Li, 'Super Ministry Reform: Background, Challenges and the Future' (2009) 39 *Environmental Law Reporter* 10152, 10155; but also note that the original context in which Confucius developed this political viewpoint was quite different from contemporary China. Confucius attributed the break-down of political institutions in his day to the failure by title-bearers to exercise their power in a righteous and virtuous manner that befitted their political positions, and this saying actually means: 'If one is to claim a title and attempt to participate in the various hierarchical relationships to which one is entitled by virtue of that title, then one ought to live up to the expectations engendered by possession of that title' (see, for a succinct account, J. Riegel, 'Confucius', *The Stanford Encyclopedia of Philosophy* (Spring 2011 edition), Edward N. Zalta (ed) <<http://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=confucius>> accessed 9 October 2011).

<sup>75</sup> Zhao, *supra* note 41, 16.

<sup>76</sup> Developing the Western provinces has been a strategic concern for the central government for reasons of internal security and political stability. Despite the launch of the official 'Western Development Strategy' in 2000, there remain great economic and social disparities between the West and the East of China. For brief summary of the program, see 'Western Development Strategy', *Xinhua News Agency* (Beijing, 22 December 2009) <[http://www.chinadaily.com.cn/china/westdevelopment/2009-12/22/content\\_9215054.htm](http://www.chinadaily.com.cn/china/westdevelopment/2009-12/22/content_9215054.htm)> accessed on 20 September 2011; for official assessment of the Western Development Strategy, see dedicated

urgency of the problem amongst local government officials is a factor behind sluggish policy responses to climate change.

### *Creative Strategies to Overcome Constraints*

Despite these constraints, some local governments have successfully met or even exceeded their energy intensity targets while others have resorted to blunt and unsustainable policies that have hurt local livelihoods.<sup>77</sup> These latter policies were clearly implemented only to meet targets, without real consideration for addressing climate change. According to media reports, the city of Wenzhou in Zhejiang Province introduced a unique, but blunt energy-saving policy: every four days, businesses and factories were required to turn off their electricity supply for an entire day.<sup>78</sup> Local residents were, of course, been frustrated and angry at these rather crude and desperate measures, which were introduced in the final year of the Eleventh five-year plan to meet the energy targets.

Kostka and Hobbs, based on their fieldwork in Shanxi province (a major coal-producing and energy intensive province), suggest that the local governments there succeeded in meeting energy targets by ‘bundling’ energy objectives with the interests of groups with significant influence and ‘bundling’ energy efficiency with policies of more pressing local importance.

The former strategy involves local government officials aligning their interests with those of SOEs and large private companies by communicating the importance of the energy-saving policy and indicating the willingness of local authorities to provide compensatory benefits to enterprises that comply.<sup>79</sup> These benefits include assurance of preferential access to land and capital. The bargaining process, of course, is flexible and different tactics of appeasement or pressure are used to ensure that the enterprises

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website ‘Western China Development Strategy, 10 Years On’, *China Daily*

<<http://www.chinadaily.com.cn/china/westdevelopment/top.html>> accessed 20 September 2011; for discussion, see Hongyi Harry Lai, ‘China’s Western Development Program: Its Rationale, Implementation and Prospects’ (2002) 28(4) *Modern China* 432-466.

<sup>77</sup> Leslie Hook, ‘China feels strain in rush to save energy’ *Financial Times* (18 October 2010) <<http://www.ft.com/intl/cms/s/0/39deeff4-dad8-11df-a5bb-00144feabdc0.html#axzz1aBlqi1km>> accessed 2 October 2011.

<sup>78</sup> ‘温州减排顶风上演“断电风暴” 开工 1 天停电 4 天’, *Sohu News* (27 September 2010) <<http://business.sohu.com/20100927/n275285217.shtml>> accessed 3 October 2011.

<sup>79</sup> Kostka and Hobbs, *supra* note 42, 6.

agree to undertake measures that will allow the officials to meet their targets.<sup>80</sup> The managers of SOEs and private enterprises respond to different types of incentives. The managers of SOEs are easier to convince because they themselves are likely to be subjected to similar energy targets under the cadre system and will be punished during their performance evaluation if they fail to meet their energy goals. Furthermore, SOE managers are motivated by prospects of promotion to politically prestigious positions. Kostka and Hobbs note, for example, that ‘it is common knowledge among Shanxi enterprise managers that the former head of the largest iron and steel plant in Shanxi, Taiyuan Iron and Steel, was promoted to deputy governor of the province after increasing efficiency and raising production standards at the company’.<sup>81</sup> Private-sector managers, on the other hand, respond less to political incentives and more to factors such as increased market share due to consolidation of production capacity in the hands of the most efficient companies. They are also concerned about maintaining access to capital from local banks, which commonly align loan decisions with the interests or directions of local mayors and party secretaries.<sup>82</sup>

An example of the latter strategy is the framing of the Shanxi Top 1000 Enterprise Program (a provincial-level version of the National Top 1000 Enterprise Program) and the policy of closing small and inefficient industrial plants as part of programs aimed at upgrading production capacity and economic restructuring.<sup>83</sup> This approach is also used to subtly sell the idea that energy saving policies lead to social benefits in the long run, such as employment creation and enhanced workplace safety.<sup>84</sup> By shifting production capacity from small or under-performing enterprises to large, efficient enterprises that can boost economic growth with higher energy efficiency, socially disruptive consequences can ensue.<sup>85</sup> Such effects cannot be adequately explored in this chapter, but it would be important to carry out further research on the consequences of local government policies in the name of energy saving and climate change.

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<sup>80</sup> Ibid.

<sup>81</sup> Kostka and Hobbs, *supra* note 42, 18.

<sup>82</sup> Ibid.

<sup>83</sup> Ibid, 26.

<sup>84</sup> Ibid.

<sup>85</sup> Giles, Park and Cai have shown that the wide-spread and large employment shocks during the economic restructuring period of 1996 to 2001 had particularly adverse effects on women and children. The limited coverage of public welfare programmes meant that many dislocated workers received little or no assistance from the State; John Giles, Albert Park and Fang Cai, ‘How has Economic Restructuring Affected China’s Urban Workers?’ (2006) Vol. 185 *The China Quarterly* 61-95.



### **Part III: Clean Development Mechanism**

#### **Background**

The CDM has taken off in an impressive manner in China, which has emerged as the world's largest supplier of CDM carbon credits (known as Certified Emissions Reductions (CERs)). As of 17 October 2011, the country hosted 1626 registered CDM projects, which accounted for 46% of the total number of registered projects worldwide.<sup>86</sup> This positive performance of the CDM in China can be attributed to the capacity-building projects funded by multilateral banks and donor countries to raise awareness and develop technical expertise, the central government's well-designed regulatory process for CDM project approval, as well as the concerted efforts to raise the level of awareness and interest in the CDM amongst local governments.<sup>87</sup>

Before the Kyoto Protocol came into force in 2005, a major study by the World Bank, the Chinese Ministry of Science and Technology, and two bilateral donors, was conducted to identify the potential size of the Chinese CDM market and the opportunities and barriers to developing this potential market. A key barrier that was identified was that 'the central government is knowledgeable about CDM, but there is relatively little awareness of CDM at the provincial and local levels'.<sup>88</sup> Hence, the recommendation was to promote the CDM in provinces and cities that have been identified as having significant potential for such projects through workshops, training courses and establishing a roundtable to develop shared expertise from on-going pilot CDM projects.<sup>89</sup>

The first CDM provincial centres opened in 2004. Their primary function is to raise local awareness about the CDM, particularly in China's western and underdeveloped regions, where the central government wishes to see more investment

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<sup>86</sup> Clean Development Mechanism, Statistics, United Nations Framework Convention on Climate Change website, <<http://cdm.unfccc.int>> accessed 17 October 2011.

<sup>87</sup> The World Bank, 'Clean Development Mechanism in China: Five Years of Experience (2004-09)' (May 2010) <[www.worldbank.org.cn](http://www.worldbank.org.cn)> accessed 10 October 2011; See Annex 4 for a comprehensive overview of the various CDM capacity-building projects in China as of early 2010.

<sup>88</sup> The World Bank et al, 'Clean Development Mechanism in China: Taking a Proactive and Sustainable Approach', 2<sup>nd</sup> edition, September 2004, <[www.worldbank.org.cn](http://www.worldbank.org.cn)> accessed 7 October 2011, 77.

<sup>89</sup> Ibid, 78-9.

in energy infrastructure.<sup>90</sup> These centres reach out to project owners via governmental channels. While CDM project approval remains in the ambit of the central government, provincial CDM centres help to disseminate information and serve as a crucial contact point, at least initially, between Chinese project developers and foreign CER buyers.<sup>91</sup>

### Local Governments Respond Positively

Provincial governments have responded to the CDM with the enthusiasm of profit-oriented enterprises.<sup>92</sup> The CDM has been an attractive new source of revenue for local governments and has provided incentives for investment in renewable energy projects (particularly in hydro and wind power). Zhang argues, for example, that the CDM has been an important driver behind wind power expansion in China.<sup>93</sup> The wind power tariffs (as determined by the central government) are considered to be too low to generate much interest in developing wind projects. By registering a wind project under the CDM, the sale of CERs can boost the internal rate of return by 6-20% in comparison to wind power projects undertaken outside the CDM framework.<sup>94</sup>

What is unique about the nature of Chinese local government involvement in the CDM is (1) that the local governments are owners of the CDM projects (ie, they are project developers) and not just acting as facilitators of project transactions between buyers and sellers of CERs; and (2) the majority of CDM projects are owned by local governments. This arrangement is primarily the result of the Chinese rule that permits only companies that have at least 51% Chinese ownership to carry out CDM projects. Article 11 of the *Measures for Operation and Management of Clean Development Projects in China* states 'Chinese funded or Chinese-holding enterprises within the territory of China are eligible to conduct CDM projects with foreign partners'. Thus, municipal enterprises (controlled and supervised by local governments) own

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<sup>90</sup> Miriam Schroeder, 'Varieties of Carbon Governance: Utilizing the Clean Development Mechanism for Chinese Priorities' (2009) 18(4) *The Journal of Environment and Development* 371, 380; The World Bank, *supra* note 68, 56.

<sup>91</sup> For an account of the CDM regulatory framework in China, see J. Lin, 'Environmental Law and Policy in China: Responding to Climate Change' in G. Yu (ed) *The Development of the Chinese Legal System: Changes and Challenges* (Routledge 2010) 301-2.

<sup>92</sup> Ye Qi, *supra* note 44, 394; The World Bank, *supra* note 68, 33.

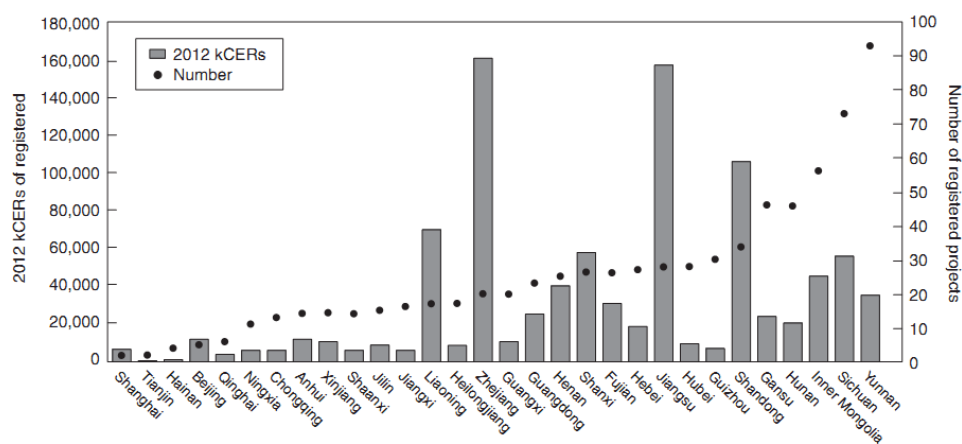
<sup>93</sup> Zhang, *supra* note 25, 6644.

<sup>94</sup> *Ibid.*

two-thirds of all registered CDM projects in China.<sup>95</sup> SOEs own 27% and the private sector owns about 5% of registered Chinese CDM projects respectively.<sup>96</sup> These figures highlight the entrepreneurial spirit of local governments – while they may be labouring under the ‘iron hand’ to implement their energy targets, they are also quick to recognise business opportunities created by the burgeoning green economy. Once again, it is salient to note that local governments are not investing in CDM projects because they are keen to address climate change per se, but because the CDM is a revenue generator. To the extent that the CDM allows the local government to claim that it is improving its environmental performance and promoting climate mitigation, the climate aspect is an ancillary motivation for local authorities. The next section provides an overview of the distribution of CDM projects across provinces. This information gives interesting insights into the most popular types of CDM projects and how the provincial distribution is likely to change over time.

### Provincial Distribution of Projects

**Figure 1: Provincial Distribution of Currently Registered CDM Projects and Cumulative CERs Expected by 2012<sup>97</sup>**



<sup>95</sup> The World Bank, supra note 68, 33.

<sup>96</sup> Ibid.

<sup>97</sup> Reproduced from The World Bank, supra note 68, 12.

**Figure 2: Types of Registered CDM Projects in China<sup>98</sup>**

Project Type	No. of Project	Percentage of Total Number	CERs/year (ktCO <sub>2</sub> -e)	Percentage of Annual CERs
Wind	165	22.0%	19,525	9.5%
Hydro	370	49.3%	39,458	19.3%
HFCs	11	1.5%	65,651	32.0%
Methane	61	8.1%	18,582	9.1%
Energy Efficiency	73	9.7%	16,314	8.0%
Afforestation & Reforestation	2	0.3%	49	0.02%
N <sub>2</sub> O	26	3.5%	20,932	10.2%
Biomass	16	2.1%	2,496	1.2%
Fossil Switch	19	2.5%	20,525	10.0%
Produce Cement from Calcium Carbide	5	0.7%	1,199	0.6%
Solar	3	0.4%	112	0.05%
Total	751	100.0%	204,843	100.0%

CDM projects occur in almost every Chinese province, with Yunnan, Inner Mongolia and Gansu, the poorest provinces on a per capita GDP basis, hosting the largest number of CDM projects. Yunnan, with the highest number of these projects, has a strong emphasis on hydropower development because of its rich riparian resources. Inner Mongolia ranks third in terms of number of projects and is a leader in wind power development in China. The first CDM project in China is the Huitengxile wind farm project located in Huitengxile, Inner Mongolia, with a total wind power capacity of about 34.5 megawatts.<sup>99</sup> Shanxi ranks fourth in terms of the volume of CERs generated by CDM projects in its province and is a leader in coal bed methane development.

It is clear from Figure 2 above that renewable energy projects (wind and hydro)

<sup>98</sup> Ibid, 24.

<sup>99</sup> The project proponents are the Inner Mongolian Wind Power Corporation and the Chinese Renewable Energy Industries Association, and the investor is CERUPT, the Dutch Government's CDM credit procurement programme; see The World Bank et al, *supra* note 69, xxii.

dominate the Chinese CDM portfolio, but Figure 1 shows a sharp discrepancy between the number of projects and the volume of CERs produced by each province. Yunnan may host the highest number of CDM projects, but Zhejiang, Jiangsu and Shandong produce the most CERs by a large margin. The high volume of CERs produced by these three provinces is attributable to their hosting HFC-23 destruction projects. The 100-year Global Warming Potential (GWP) of HFC-23, which is generated as a by-product of manufacturing hydrochlorofluorocarbons (HCFC)-22 (used as a refrigerant or as a feedstock in Teflon manufacture), is 11,700. Thus, under the rules of the CDM which converts the other six Kyoto Protocol regulated gases to carbon dioxide, and hence CERs based on their GWPs, a ton of HFC-23 abated is considered equivalent to 11700 tons of carbon dioxide.<sup>100</sup> The sale of CERs has led to greater wealth for these already-prosperous Eastern provinces. However, as HFC-23 projects are few and as more renewable energy projects start issuing CERs, a more balanced distribution of the volume of CERs created across provinces should ensue.<sup>101</sup>

It is interesting to note that the CDM has not played a significant role in helping local governments meet their energy efficiency targets. The lack of viable CDM methodologies, the difficulties of calculating emissions reductions, determining additionality, project boundaries and applicable baselines, have been cited as the main reasons for the relatively meager contribution of energy saving and efficiency CDM projects.<sup>102</sup> In addition, most projects are small or mid-sized in nature and generate an uncertain and limited number of CERs.<sup>103</sup> Local governments are therefore less keen to implement them. However, this picture may change as relatively lower transaction costs for projects become possible from implementing new methodologies and undertaking CDM projects on a more comprehensive, program-wide basis.

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<sup>100</sup> Michael Wara, *Measuring the Clean Development Mechanism's Performance and Potential*, (Working Paper No. 56, July 2006) Program on Energy and Sustainable Development at the Centre for Environmental Science and Policy, Stanford University, 26.

<sup>101</sup> In July 2011, China was granted US\$265 million by the Multilateral Fund for the Implementation of the Montreal Protocol to carry out the first stage of its HCFC phase-out management plan. The reduction to be eventually achieved will amount to 17% of China's total amount of controlled HCFC use. The reduction of HCFC use will also reduce production of HFC-23, limiting the viability of HFC-23 destruction as CDM-registered projects; United Nations Environmental Programme News Centre, 'China Commits to Landmark Agreement with Dual Ozone and Climate Benefits' (29 July 2011, <<http://www.unep.org/newscentre/default.aspx?DocumentID=2649&ArticleID=8824>> accessed 9 October 2011.

<sup>102</sup> The World Bank, *supra* note 68, 52.

<sup>103</sup> *Ibid.*

## Part IV: Conclusion

This chapter has sought to provide an insight into the forms, dynamics and incentives that shape climate governance in China. The central government plays a key role in shaping policy and issuing directives that are then implemented by local governments. Local government officials respond to the directives to address climate change, reduce energy consumption and improve energy efficiency because these directives are translated into mandatory targets that determine their career path, salaries and political prospects.

Faced with diverse priorities and incentives, local governments tend to place economic development ahead of environmental protection while climate change is a rather nebulous concept with no tangible policy implications at least in the short-term. Hence, it garners little attention from local officials. However, faced with mandatory targets, local government officials have crafted creative solutions to encourage energy saving as they navigate a politically complex terrain. Finally, in line with their profit orientation, local governments have embraced the CDM as a novel source of revenue and a means of crucial financial support for renewable energy projects in poorer provinces.

The introduction of a cap-and-trade carbon trading scheme in China, similar to the European Union Emissions Trading Scheme (EU ETS), has been on the government's agenda.<sup>104</sup> Anecdotal evidence has it that officials from Beijing and major cities like Shanghai and Guangdong have been visiting Brussels to gain a better understanding of the EU ETS and to draw lessons for China's experiment with domestic carbon trading.<sup>105</sup> On 23 November 2011, the state news agency (Xinhua) reported that the NDRC has given the green light for a pilot GHG emissions trading scheme in seven provinces to test its feasibility for deployment across the country.<sup>106</sup>

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<sup>104</sup> Li Jing, 'Carbon Trading in Pipeline' *China Daily* (Beijing, 22 July 2010)

<[http://www.chinadaily.com.cn/bizchina/2010-07/22/content\\_11034422.htm](http://www.chinadaily.com.cn/bizchina/2010-07/22/content_11034422.htm)> accessed 24 November 2011.

<sup>105</sup> Interview with environmental lawyer, Beijing, on file with author.

<sup>106</sup> 'China to pilot carbon emissions rights trading scheme: economic planner' *Xinhua News Agency* (Beijing, 22 November 2011).

<[http://news.xinhuanet.com/english2010/china/2011-11/22/c\\_131263322.htm](http://news.xinhuanet.com/english2010/china/2011-11/22/c_131263322.htm)> accessed 24 November 2011. The provinces include Beijing, Tianjin, Shanghai, Chongqing, Shenzhen, Hubei and Guangdong. Details such as how the scheme will work and how long it will last are not available, to the best of the

These developments will increase the involvement of local governments and corporations in climate mitigation but will have limited impact on changing the prevalent social indifference to climate change and the need for adaptation. Capacity-building efforts should therefore focus on education and awareness-raising of all sectors of society, but particularly the current generation of young Chinese who will be responsible for determining whether China becomes a massive polluter and energy consumer or a success story of sustainable development in the twenty-first century.